

Specification for advanced CMM measurement software with mobile workstation

This specification is for the Supply, Installation and training of an advanced CMM measurement software with mobile workstation. The software shall be compatible with CNC controlled fixed and portable CMMs of different make.

Technical Specification	
Sl. No.	Description
1.	Software
a.	The software shall have direct plug-in connectivity for various brands of fixed and portable CMMs. Single measurement software having the following features for CMM operation, programming, calibration of probe, CAD model-based inspection and having compliance with the latest GPS/GD&T (ISO /ASME Y14.5) etc. shall be quoted. The details / features / capabilities of the software should be provided along with the catalogue. Multiple software's are not acceptable to carry out the CMM operation, programming & inspection(including CAD model based inspection).
b.	<p><u>Geometry measurement</u></p> <ul style="list-style-type: none"> i. Measurement of standard geometric elements such as point, line, plane, circle, cylinder, sphere, cone, etc. ii. Form error computation of the above geometrical elements. iii. Computation of geometrical tolerances like straightness, flatness, roundness, cylindricity, parallelism, perpendicularity, angularity, position, concentricity , symmetry, profile, run out, sphericity etc. iv. Computation of following geometric relations (between geometric elements) : Distance, Bisector, Angle, Perpendicular foot, Normal plane, Tangent, Mid-elements, Intersection, Projections etc. v. Mathematical transformation of co-ordinate systems. vi. Multiple methods for construction of geometrical features like point, line, plane, circle, sphere, cone, cylinder etc. vii. Extracting geometrical elements from CAD model. <p>Note : Additional features, if any, to be specified by the party (for the quoted software)</p>
c.	<p><u>Report / Output</u></p> <ul style="list-style-type: none"> i. Extended report capabilities including customizable report layouts, automatic report generation and export to PDF, MS Excel, MS Word etc. ii. Capability to export to Pre-Formatted Excel templates iii. Comparison between nominal and actual points.
d.	<p><u>CAD model-based inspection</u></p> <ul style="list-style-type: none"> i. Importing 3D nominal profile (CAD model) like IGES, STEP etc. ii. Measurement of 3D profile (surface) and form error measurement w.r.t nominal profile (surface). iii. Comparing CAD Features with inspected data in both online & offline mode.

	<ul style="list-style-type: none"> iv. Scanning and digitization. v. Various options for alignment of part w.r.t CAD model (based on 3 point, 3-2-1 points, geometrical feature in the job & CAD model, best fit of surface / points etc.). vi. The software should be capable of processing and measurement with CAD files of size 500MB (or higher). <p>Note : Additional features, if any, to be specified by the party(for the quoted software).</p>															
e.	<p><u>Connectivity</u></p> <ul style="list-style-type: none"> i. Software shall have the capability to communicate and acquire data from Bluetooth enabled Gauges, Vernier Calipers, Micrometers etc. of different make like Mitutoyo, Mahr, Tesa. 															
f.	<p><u>Software compatibility</u></p> <ul style="list-style-type: none"> i. Software shall be supported by latest version of Windows operating system. ii. Software shall be compatible for future up-gradation. 															
g.	<p><u>Hardware compatibility</u></p> <p>The software shall be compatible with CNC controlled fixed and portable CMMs of different make as per the following table</p> <table border="1"> <thead> <tr> <th>SI No</th> <th>Equipment</th> <th>Controller details</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>LK G90</td> <td>NPA30 / NMC300 / PI200</td> </tr> <tr> <td>2</td> <td>Leitz pmmc</td> <td>Leitz controller</td> </tr> <tr> <td>3</td> <td>Hexagon Global Performance</td> <td>Hexagon controller</td> </tr> <tr> <td>4</td> <td>Hexagon Absolute Arm</td> <td>Hexagon controller</td> </tr> </tbody> </table>	SI No	Equipment	Controller details	1	LK G90	NPA30 / NMC300 / PI200	2	Leitz pmmc	Leitz controller	3	Hexagon Global Performance	Hexagon controller	4	Hexagon Absolute Arm	Hexagon controller
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h.	<p><u>Other features</u></p> <ul style="list-style-type: none"> i. PTB Germany certification or equivalent (for the supplied software). ii. Offline operation of the software, ie without the switching on the CMMs, shall be possible iii. Simultaneous operation in multiple windows shall be possible i.e. while running a program, the software shall allow editing of an existing program and/or create an offline program. iv. Node locked perpetual license <p>Note : Additional features, if any, to be specified by the party(for the quoted software).</p>															
2.	<p>Computer and accessories</p> <p>High-end mobile workstation (latest model at the time of bidding having the following or better configuration) shall be quoted for machine operation, measurement, analysis etc. using the supplied software.</p> <ul style="list-style-type: none"> i. Processor: Intel Core i7-12850HX (25 MB cache, 24 threads, 16 cores, 2.10 GHz to 4.80 GHz, vPro) or better ii. Display: 17.3", FHD 1920 x 1080, 60Hz, Anti-Glare, 99% DCIP 3,500 Nits, IR Cam/Mic WLAN or better iii. Memory (min): 64GB, 1x64GB NECC 4800MHz DDR5 CAMM Module iv. Storage (min) : M.2 2280 1 TB, Gen 4 PCIe x4 NVMe, Solid State Drive 															

	<ul style="list-style-type: none"> v. Battery: 6-Cell 93WHr Lithium Ion Battery or better vi. Graphics adapter: NVIDIA RTX A3000 12GB GDDR6 or better vii. Communication: Intel Wi-Fi 6/6E (up to 6GHz) AX211 2x2 with Bluetooth Wireless, Wireless Intel AX211 WLAN Driver viii. Operating System: Microsoft Windows 11 Pro 64 Bit or latest ix. I/O Ports and Connectors: RJ-45 port 10/100/1000 Mbps, USB 3.2 Gen1 Type-A port, USB 3.2 Gen1 Type-A port with powershare, USB 3.2 Gen2 Type-C Thunderbolt ports, HDMI 2.1 port, SD card port, Mini Display Port (optional), Universal Audio Jack (optional), Smart card reader slot (optional) x. Multimedia: Speakers(inbuilt and external), Microphone and HD camera xi. Productivity software: Microsoft office (Preloaded with latest licensed version) xii. Printer: A4 colour laser printer, latest model of reputed make xiii. Warranty : Standard OEM warranty
3.	Installation and commissioning
	All features of the software detailed herein shall be fully demonstrated at our site on various CMMs make(refer 1g.) using the supplied mobile workstation .
4.	Training
	Extensive training (10 days in phased manner) should be provided by your personnel at our site after installation of the software. The training should cover complete operation of the software, calibration and troubleshooting.
5.	Software updation
	Software updates for a period of two years from the date of installation shall be provided. During this period, party should visit our site once in 6 months.
6.	Manuals
	The operating manual of the supplied software has to be provided in the soft format.
7.	Service support
	Round the clock online support shall be available.
8.	Annual Maintenance Contract (AMC) for Software
	The vendor shall be willing to execute software AMC . Quote for AMC charge per year for a total period of 5 years beyond two years of software updation support shall be submitted. Terms & Conditions of the AMC shall be mentioned in the quote.
9.	Delivery period
	Within 2 months from the date of P.O.
10.	Compliance Chart
	Compliance chart should be submitted for all the above specification requirements. The compliance mentioned by the party should be supported by documentary evidence, (like published original catalogue). Offered specification against the

	conditions and specification mentioned here-in shall be submitted along with the quote.
11.	Offer requirement
	The bid should be submitted in two parts viz
	a. Technical, commercial (price bid with price masked).
	b. Commercial (price bid only)
12.	Technical bid
	Any specification requirement, which is not fully / properly answered in the compliance chart, will be considered as “not available with system”.
	The party may give any other relevant information & optional software features / accessories which are not covered above.
13.	Price bid
	The cost of the software and hardware (workstation), AMC and as mentioned above, shall be quoted separately. Individual cost break-up of each item should be provided. Other optional software features / accessories, if any, may also be quoted with cost break-up.